

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An inverter device for driving a sensorless DC brushless motor, comprising:

an inverter circuit for switching a direct-current voltage obtained from a direct-current power source and supplying an alternating-current current of a sinusoidal wave to the sensorless DC brushless motor, wherein the direct-current voltage of the direct-current power source is switched by three-phase modulation; and

current detecting means for detecting a power supply current between the direct-current power source and the inverter circuit,

wherein the sensorless DC brushless motor includes stator windings of a three-phase wiring (U, V, W) electrically connected to the inverter circuit and a magnet rotor, and

within a carrier period of the three-phase modulation, a current feeding time is equally added or subtracted in a current feeding period in each phase of the stator windings, and

the current detecting means is a single current detecting means which is used also for detecting the current flowing in the stator windings, and by detecting the current flowing in the stator windings as well as detecting the power supply current, a rotational position of the magnet rotor is judged to thereby control the switching of the inverter circuit.

2. - 4. (Cancelled)

5. (Previously Presented) The inverter device according to claim 1, which is adapted to be mounted on a vehicle.

6. (Previously Presented) The inverter device according to claim 1, driving the sensorless DC brushless motor which is a driving source of the compressor.

7. (Currently Amended) An air conditioner comprising a compressor, a sensorless DC brushless motor acting as a driving source of the compressor, and an inverter device adapted for driving the brushless motor,

wherein the inverter device comprises:

an inverter circuit for switching a direct-current voltage obtained from a direct-current power source and supplying an alternating-current current of a sinusoidal wave to the sensorless DC brushless motor; and

current detecting means for detecting a power supply current between the direct-current power source and the inverter circuit,

wherein the sensorless DC brushless motor includes stator windings of a three-phase wiring (U, V, W) electrically connected to the inverter circuit and a magnet rotor, and

the current detecting means is a single current detecting means which is used also for detecting the current flowing in the stator windings, and by detecting the current flowing in the stator windings as well as detecting the power supply current, a rotational position of the magnet rotor is judged to thereby control the switching of the inverter circuit,

wherein the inverter device switches the direct-current voltage from the direct-current power source by three-phase modulation and, within a carrier period of the three-phase modulation, equally adds or subtracts a current feeding time in a current feeding period in each phase of the stator windings.

8. - 10. (Cancelled)

11. (Previously Presented) The air conditioner according to claim 7, wherein the inverter device is adapted to be mounted on a vehicle.

12. (Previously Presented) The air conditioner according to claim 7, wherein the inverter device is integrally coupled to the compressor together with the sensorless DC brushless motor.

13. (Previously Presented) The air conditioner according to claim 12 comprising a suction pipe, which is adapted to the compressor, for sucking a refrigerant for cooling the inverter device.

14. (Previously Presented) The air conditioner according to claim 13, wherein the inverter device is disposed beneath the suction pipe.

15. (Previously Presented) The air conditioner according to claim 13, wherein the inverter device is disposed between the suction pipe and the compressor.

16. (Previously Presented) The air conditioner according to claim 14, wherein the inverter device is disposed between the suction pipe and the compressor.

17. (New) The inverter device according to claim 1, wherein the current detecting means is a current sensor, said current sensor detecting a current flowing in one of the three phases of the stator windings when the direct-current voltage of the direct-current power source is switched on for the one of the three phases of the modulation.

18. (New) The inverter device according to claim 1, wherein the current detecting means is a current sensor, said current sensor detecting a current flowing in one of the three phases of the stator windings when the direct-current voltage of the direct-current power source is switched on for the other two of the three phases of the modulation.